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fossil animals is likewise a matter of common honesty. Emperors, grand dukes and millionaires may found museums, and they secure recognition for their munificence; but right at hand are the masses of the people who, in the end, foot the bills, and they have also their rights. The declaration that all men are born free and equal was not a more important one and one perhaps not so wholly true as is a principle said to have been uttered by one of our senators during the debate on the pure food law: The buyer has a right to know what he is getting for his money. The principle applies in all walks of life, however much it may fret those who would secure wealth, position and honors disproportionate to their deserts. Applying it to museum administration, we may say that the visitor has a right to know whether he is gazing at real bone or at plaster, and the reasons therefor. Moreover, it is futile and mischievous to attempt to hide the nature of the restoring materials. It is sooner or later detected and suspicion is thrown on the whole exhibit.

It is the practise sometimes to build up a fossil skeleton out of the bones of various individuals. This can not be condemned in all cases, but usually it is dangerous. It may be permitted to make a skeleton of the extinct auk from as many individuals as there are bones. In the case of less well-known animals, represented probably by fewer bones there is likely to result a mixture of species and even of genera. And no hybrids are so fertile as these, inasmuch as they reproduce themselves throughout the world by means of the printing press. And these hybrids are monsters besides, having legs belonging perhaps to two or three distinct animals, the head to another and so on. Of these can we not say with Horace, who was describing[8] an object made up of members gathered here and there,

Spectatum admissi risum teneatis, amici?

And we may inquire if it advances science to send out over the world figures of an animal whose body belongs probably to one family and its head to another?

Rather than mingle the bones of several individuals belonging possibly to various species, it would be better to restore in plaster the various parts, except those of the principal individual, possibly of this also. Labels on the parts of the restored skeleton ought to direct the viewer to the bones, shown near by, on which the restorations have been based. As intimated, if visitors in the museums are not interested in plaster restorations and models it is probably because they believe that these things are products of the unchastened scientific imagination. There appears to be no other good reason why a plaster Megatherium should not be relatively as interesting as a plaster Venus of Milo. In these wholly artificial restorations the unknown parts should be as conscientiously indicated to the eye as in other cases.

And these plaster casts of the great animals that sojourned on the earth in bygone ages present another advantage that seems to be of the highest importance for the advancement of science. For now and anon some one among us, a paleontologist inchoate as yet but confident, the beneficiary of a favorable environment, bestriding his light-legged, straight-legged gypsiferous steed, perhaps *Brontodiplodococamarosaurus,* may gallop safely and merrily up the rugged slopes of the Mount of Fame.

OLIVER P. HAY

[8] "Epis. ad Pisones," I., 5.

SOCIETIES AND ACADEMIES

THE ACADEMY OF SCIENCE OF ST. LOUIS

THE Academy met at the Academy Building, 3817 Olive Street, Monday evening, April 19, 1909.

Dr. Robert J. Terry, of the Washington University Medical School, read a paper on "An Observation on the Development of the Vomer." The observations made on the development of the vomer in *Caluromys philaucler* affects the question of the homology of the mammalian vomer. Is the single vomer of mammals comparable with the single parasphenoid or the paired vomers of lower forms? Except in man the vomer of mammals has been found to arise from a single center. Lately, however, the bone in question has been seen to be accompanied by a parasphenoid ossification. It seems also to be the case in *Caluromys* that the origin of the base is paired.

Dr. Joseph Grindon then spoke on "The Protection against Disease afforded by Certain Substances in the Blood." The facts are apparent as soon as one approaches the study of the phenomena of disease. First, that the natural tendency of the body is toward cure. Second, that certain species and certain individuals are immune toward certain diseases. This immunity may be relative or absolute, temporary or permanent, natural or acquired. These two facts may be considered together, having much in common. The older theories of immunity are either untenable or incomplete. The modern view distinguishes between immunity towards poisons, and immunity toward the invasion of bacteria, which secrete these poisons. In discussing the immunity toward poisons Dr. Grindon reviewed the production of antitoxins naturally and artificially, dwelling particularly on the side-chain theory of antitoxins. In speaking of immunity toward bacterial invasion, the speaker explained the formation and function of agglutinins and coagulins. Bacteria as a rule do not thrive in bodies of living animals, because of the presence of substances inimical to them. These bodies are called lysins, and consist of two components—the amboceptor and the complement. In concluding Dr. Grindon discussed phagocytosis and its application in practise.

The Academy met at the Academy Building on Monday evening, May 3, 1909.

Professor F. E. Nipher, of Washington University, presented a paper on "Lessons to be Learned from Common Things."

Professor Wm. Trelease, director of the Missouri Botanical Garden, presented, with numerous lantern slides, an oral abstract of a paper on the "Mexican Fiber Agaves" known as zapupe, in which botanical names and descriptions were applied to five new species of *Agave*, all of economic importance.

The secretary of the entomological section reported that at the March meeting Mr. Hermann Schwarz spoke on "Collecting in Mexico," illustrated with many views and insects from that locality. At the April meeting Mr. Philip Rau exhibited a number of golden rod galls together with one species of diptera and species of hymenoptera which had emerged from them. Professor J. F. Abbott lectured on "Collecting in Japan," illustrated with lantern slides and coleoptera collected by him.

The following resolution was adopted:

Realizing that the whole country is taking stock of the natural resources which remain, and believing that the conservation in particular of the forest and water resources of the state of Missouri are of particular interest to the people of this state; realizing furthermore that available statistics show that there has been a decrease of 29 per cent. in the amount of lumber produced in the state during the last ten years; realizing furthermore the importance of conserving the forest and water resources of the state not only from the standpoint of the timber to be actually used in building and other purposes, but also with a view that the conservation of the forests within the boundaries of the state is desirable in order that the water supplies may be conserved, the farming lands preserved in their integrity and opportunities preserved for recreation grounds for the people; realizing also that some twenty-four states have already taken advanced steps, looking toward the conservation of their forest and water resources, be it

Resolved, that the Academy of Science of St. Louis endorses the report made by the forest and water commissions to the governor, and endorses the bills now pending before the legislature of Missouri, looking toward the appointment of permanent forest and water commissions, and that copies of this resolution be sent to the governor and presiding officers of the senate and house of representatives.

W. E. McCourt,
Recording Secretary

The American Chemical Society
Northeastern Section

The ninety-third regular meeting of the section was held at the Twentieth Century Club, Boston, on May 28. Dr. Willis R. Whitney, president of the society, addressed the section upon "Colloids and the Brownian Movement." The speaker pointed out many striking similarities between the properties of ions and of colloidal particles. He also presented two different theories to account for the "Brownian Movement." Dr. James F. Norris, of Simmons College, addressed the section upon "The Base-forming Properties of Carbon." The speaker presented the results already obtained in his study of the relation between the structure of the alcohols and their reactivity with aqueous solutions of the halogen acids, and showed the bearing of this work upon our knowledge of the mechanism of salt formations in general.

K. L. Mark,
Secretary